REMARKS

In response to the Office Action dated March 16, 2006, the claims have been amended to more clearly define the displayed workflow as a showing of agents together visually to depict how they interoperate with respect to planning, commitment or execution of work in response to the work request. In light of these amendments and the remarks below, the rejection of claims 1-8, 11, 12, 14, 16-19, 22-28 and 30 is respectfully traversed.

Background

As noted by the Examiner, *Miyazaki*, like the present invention, teaches generally a multi-agent control system. See, generally, col. 9, ll. 48-59. One of *Miyazaki's* goals is to improve the operating efficiency of a multi-agent control system by quickly defining the cooperative operation of tasks between the agents. See, generally, col. 3, ll. 57-62. Another goal of *Miyazaki* is to provide a multi-agent control system that can handle multiple users and their separate tasks without the need for additional functionality in the agents. See, generally, col. 3, ll. 63-67. A third goal of *Miyazaki* is to provide a multi-agent control system that can process user requests more quickly than is possible with prior art systems. See, generally, col. 4, ll. 1-3. However, *Miyazaki* only discloses a user interface for a multi-agent system in only the most cursory of manners. See, col. 4, ll. 41-43 ("a communicating means for transmitting/receiving information to/from the agents or the user..."). *Miyazaki* does not teach an improved system or method of displaying agent-related information on a user interface and specifically does not teach displaying the workflow between agents. .

In contrast, the present invention provides a novel method of depicting the operation of a complex agent-based system by showing a workflow between agents. One embodiment of the present invention includes an apparatus and method of monitoring and evaluating messages communicated between agents and work requests generated and responded to by the agents. With the workflow data presented in such a manner, a user can evaluate, control, modify and debug the multi-agent system.

The invention contemplates, in one embodiment, a graphical display of a workflow among agents performing a work request in a tree-type diagram. The tree-type diagram represents different agents performing portions and subportions of a particular work request (the

"branching" in the tree-type diagram). Other types of agent workflow display and interfacing are contemplated and claimed in the pending application.

Amendments

The independent claims 1, 23 and 28 have now been amended to clearly indicate that the workflow of the present invention represents an interrelationship of agents collaborating to perform a work unit and specifically a workflow showing agents visually linked with respect to planning, commitment or execution of work in response to the work request.. Support for this limitation is found in paragraph [0052] of the published application.

Claim Rejections 35 U.S.C. §102

Claims 1-8, 11, 12, 14, 16-19, 22-28 and 30 have been rejected under 35 U.S.C. §102(b) as being anticipated by *Miyazaki* (U.S. Patent No. 6,285,977).

Regarding pending claim 1, the Examiner asserts that *Miyazaki* discloses each and every limitation of this claim. Under MPEP § 2131,

> "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

Applicant respectfully submit that *Miyazaki* does not disclose, either expressly or inherently, a user interface having a window displaying a workflow among a first plurality of agents. These express limitations, particularly the workflow, distinguish the present invention from *Miyazaki*. The section of *Miyazaki* cited by the Examiner (col. 13, ll. 45-52) only discloses the cooperating methodology of agents in a multi-agent system with multiple users. The term "structure" in the cited section does not refer to workflow among agents but instead refers to "...the request input by the user ... converted into an appropriate form reflecting the characteristics of the user so that the system can interpret the request input by the user..." See, *Miyazaki*, col. 13, ll. 36-39. This corresponds with one goal of *Miyazaki*; namely, the ability to handle multiple user requests without needing to add more functionality to the agents. *Miyazaki* simply does not teach or disclose a user interface including a window displaying a workflow among agents.

The amended claims now include the limitation of displaying a workflow, i.e., the interrelationship of agents collaborating to perform a work unit. Accordingly, the present invention now clearly includes this limitation while *Miyazaki* does not. The goals of the present invention and *Miyazaki* are different. The present invention is concerned with debugging a multi-

agent system while *Miyazaki* is concerned with making a simpler and faster multi-agent control system. *Miyazaki* does not display the interrelationships of the agents because there is no need to do so.

Regarding pending claim 23, the Examiner asserts that *Miyazaki* also discloses each and every limitation of this claim. Applicant respectfully disagrees. First, *Miyazaki* makes no mention that the multi-agent control system is a *distributed* control system as it is generally known in the art. Specifically, there is no disclosure of multiple controllers running the multi-agent system. Tasks may be distributed among agents (see col. 4, l. 12) but there is no mention of distributed controllers. The present invention, as claimed in claim 23, clearly describes a distributed control system which "controls and/or monitors the operation of a process performed by a plurality of machines 12, each of which is associated with a respective electronic computer or controller 4, 14 of the control system." See *Tichy et al.*, ¶ [0018]. *Miyazaki* does not teach, either expressly or inherently a plurality of controllers.

Furthermore, as stated above, *Miyazaki* does not teach a particular style of user interface such as the "plurality of windows" limitation in pending claim 23. *Miyazaki* also does not disclose displaying messages communicated between agents nor the workflow occurring between agents.

Regarding pending claim 28, the Examiner asserts that *Miyazaki* discloses each and every limitation of this claim. Applicant respectfully disagrees for the reasons stated above. As pointed out above, *Miyazaki* does not disclose multiple controllers or displaying agent-related information, including workflow, messages between agents, work unit requests and message content in a plurality of windows.

The remaining claims rejected by the Examiner depend from one of the above independent claims, which for the reasons stated above, are all believed to define patentable subject matter. In light of these remarks, it is believed that claims 1-30 are in condition for allowance and allowance is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it would help expedite the prosecution and allowance of this application.

Applicant requests a one-month extension of time from June 16, 2006 to July 16, 2006 in which to respond to the Office Action dated March 16, 2006. A check in the amount of $120 in

payment of the fee by a large entity for a one-month extension of time is enclosed. Authorization is given to charge any additional fees or credit any overpayment in connection with this or any future communication to Deposit Account No. 50-1170.

Respectfully submitted,

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